

Application No.: 10/033,026

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Docket No.: 60607DIV (50553)

REMARKS

Claims 5-13 are pending and under examination. Claims 5, 6, and 9-13 are rejected. Claims 7 and 8 objected to. Claims 5, 7, 8, and 10 are amended herewith and claims 6 and 9 are canceled. These amendments were made merely to expedite prosecution. Applicants reserve the right to pursue the original subject matter of this application in a later filed application claiming the benefit of the instant application, including without prejudice to any determination of equivalents of the claimed subject matter. Each of the rejections is addressed below.

Support for the Amendments

Support for the amendments appears throughout the specification and claims as filed. For example, support for the amendment of claim 5, which now recites SEQ ID NO:4, is found at page 8, lines 8 and 9, and in the Sequence Listing; support for the amendment of claims 7 and 8, which are now in independent format, is found at claims 5, 7 and 8 as originally filed; support for the amendment of claim 10, which now recites SEQ ID NO:1, is found, for example, at page 8, lines 1 and 2, and in the Sequence Listing. No new matter is introduced by these amendments.

Rejection under 35 U.S.C. § 102(b)

Claim 10, which is directed to an isolated fragment of the human N-type calcium channel $\alpha_{1B}+\text{SFVG}$ subunit nucleic acid molecule, was rejected under 35 U.S.C. § 102(b). The Examiner asserts that the claimed invention is anticipated by the *ApaI* linker published in the New England BioLabs 1995 Catalog, pages 106-108. This rejection is overcome by the amendment of claim 10, which now requires that the isolated fragment comprise SEQ ID NO:1, a nucleic acid sequence that encodes the SFVG insert. The published linker does not include SEQ ID NO:1. Thus, the anticipation rejection should be withdrawn.

Rejection under 35 U.S.C. § 112, first paragraph

Claims 5, 6, and 9-13, which are directed to isolated human N-type calcium channel $\alpha_{1B}+\text{SFVG}$ subunit nucleic acid molecules (claims 5, 6, 7, and 10), expression vectors (claims 11, and 12), and host cells comprising such nucleic acid molecules, are rejected under 35 U.S.C. § 112,

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first paragraph, as lacking an adequate written description of the claimed invention. In particular, while the Examiner acknowledges that applicants have provided an adequate written description of SEQ ID NO:3, the Examiner asserts that the scope of the rejected claims is overly broad because they encompass mutated sequences, allelic variants, splice variants, and homologs. This rejection is overcome by the amendment of claim 5 and the cancellation of claims 6 and 9.

Amended claim 5, from which rejected claims 10-13 depend, is now directed to nucleic acid molecules that encode SEQ ID NO:4, which is the amino acid sequence of the human N-type calcium channel α_{1D} -SFVG subunit polypeptide. Applicants were the first to describe the nucleic acid and amino acid sequences of this novel human isoform of the N-type calcium channel, which unexpectedly contained an SFVG insertion that was not found in any prior art sequence (page 9, lines 10-15). Accordingly, the written description rejection should be withdrawn.

Objection to Claims 7 and 8

The Examiner objects to claims 7 and 8 for depending from rejected claim 5, and indicates that the claims would be in condition for allowance if rewritten in independent format. This objection is overcome by the present amendment of claims 7 and 8, which no longer depend from claim 5. Prompt allowance of these claims is respectfully requested.

SUMMARY

In view of the above amendments, applicant believes the pending application is in condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue. Should any of the claims not be found to be allowable, the Examiner is requested to telephone Applicants' undersigned representative at the number below. In advance, Applicants thank the Examiner for this courtesy.

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No fee is believed due, however, the Director is hereby authorized to charge any credits or deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105, under Order No. 60607(50553).

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Respectfully submitted,

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